

REMARKS

Claims 157-174 remains pending for examination.

Rejections under 35 U.S.C. §112, ¶2

Claims 157-174 have been rejected under 35 U.S.C. §112, ¶2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Patent Office states that it is unclear if the “inlet fluidly connectable to a source of nutrients” is the same or different from the “inlets” of the reaction units.

Applicants note that the two inlets are different. The first inlet recited in the claims is an inlet of the reaction unit, while the second inlet is an inlet of the chamber. It should be noted that the two inlets are each preceded by the indefinite article “an,” and are thus clearly separately identified as being part of the respective reaction unit or chamber. Accordingly, it is believed that claim 174 is clear as presented, and thus, it is respectfully requested that the rejection be withdrawn. The remaining claims each depend, directly or indirectly, from independent claim 174, and are believed to be allowable for at least the same reasons. Withdrawal of the rejection of these claims is also respectfully requested.

Rejections under 35 U.S.C. §102(e) in view of WO 99/55828

Claims 158-160, 169-171, and 174 have been rejected under 35 U.S.C. §102(e) as being anticipated by WO 99/55828.

At the outset, it is believed that “WO 99/55828” is a typographical error, and that the Patent Office intended to reject these claims in view of WO 99/55827. In particular, the figures shown on page 4 of the Office Action appear to have come from WO 99/55827, not WO 99/55828. Applicants will thus address their comments to WO 99/55827.

Applicants do not concede that WO 99/55827 is properly prior art to the Applicants’ claimed inventions. Applicants reserve the right to establish invention dates for the claimed inventions that are on or before the effective 35 U.S.C. §102(e) date of WO 99/55827 relied on in the Office Action.

The Patent Office states that Fig. 1 of WO 99/55827, reproduced in the Office Action, illustrates a reactor comprising various features, including “a membrane (15) which defines a

wall in the chamber (2).” However, WO 99/55827 identifies item (15) as a pillar (i.e., “a raised, moulded structure”), not a membrane. For instance, page 5, lines 21-26 of WO 99/55827 states:

With reference to Figure 3, in a further embodiment of the apparatus, the cell growth chamber (2) may be provided with raised moulded structures disposed on the base portion of the cell growth chamber to form pillars (15), such that they form a barrier to the flow or passage of cells arriving in the cell growth chamber (2) through the inlet channel (1), while allowing the passage of liquid.

In addition, Fig. 3 in WO 99/55827 depicts item (15) as a series of individual square posts, while Fig. 1 in WO 99/55827 does not identify an item (15) anywhere, contrary to the statements in the Office Action that suggest otherwise. In addition, the Patent Office identifies the assay chamber (3) as being separated from the cell growth chamber by the membrane. However, as noted, since item (15) is a series of pillars, the assay chamber is not separated from the cell growth chamber in WO 99/55827 by a membrane.

Also, some other items identified by the Patent Office as being in WO 99/55827 appear to be incorrect. For example, (9) is a sample reservoir, not a chamber constructed and arranged to maintain and cultivate cells in culture (it appears that the Patent Office has also identified (9) in WO 99/55827 as being two different elements). Other mischaracterizations need not be discussed further in view of distinctions described here.

While WO 99/55827 does disclose a membrane useful with the device disclosed, there is no disclosure or suggestion of a membrane in combination with and in relation to other features of the Applicants’ invention as recited in claim 174.

Thus, it is believed that WO 99/55827 does not anticipate independent claim 174, and it is respectfully requested that the rejection of claim 174 be withdrawn. The remaining claims each depend, directly or indirectly, from claim 174, and are believed to be allowable for at least the same reasons. Withdrawal of the rejection of these claims is also respectfully requested.

Rejections under 35 U.S.C. §102(e) in view of Wilding

Claims 157-162, 165, 168, and 174 have been rejected under 35 U.S.C. §102(e) as being anticipated by Wilding, *et al.*, U.S. Patent No. 6,184,029 (“Wilding”).

Applicants do not concede that Wilding is properly prior art to the Applicants' claimed inventions. Applicants reserve the right to establish invention dates for the claimed inventions that are on or before the effective 35 U.S.C. §102(e) date of Wilding relied on in the Office Action.

The Patent Office states that the device of Wilding comprises plastic or glass, which is considered capable of supporting cell growth. However, the Patent Office has not pointed out where Wilding discloses a chamber having a surface suitable for cell growth, or a chamber that is constructed and arranged to maintain and cultivate cells in culture. The device of Wilding is intended to be used for the destructive testing of cells, e.g., for polynucleotide amplification (e.g., in PCR). For instance, col. 4, lines 51-53 describes "lysing means" that are provided for "lysing cell components of a biological test sample." Col. 11, lines 1-5 also states that "In carrying out polynucleotide amplification using device 110, cells of interest transferred from discharge section 28 of the sample preparation device 10 are subject to lysis either by a lysing agent or by a lysing structure as described in the above-mentioned U.S. Pat. No. 5,304,487." There is no disclosure in Wilding of maintaining and cultivating cells in culture in a device, and in fact, Wilding teaches away from such a use.

There are other distinctions between the instant claims and Wilding, many of which will not be discussed here since other distinctions remove Wilding as an anticipatory reference. But collectively, it is clear that Wilding does not disclose a chamber constructed and arranged to maintain and cultivate cells in culture, a membrane defining at least one wall of a fluid pathway comprising the chamber, and an enclosure positioned proximate the membrane, where at least one product of an interaction involving cells in the chamber passes across the membrane into the enclosure, as recited in claim 174.

Thus, it is believed that Wilding does not anticipate independent claim 174, and it is therefore respectfully requested that the rejection of claim 174 be withdrawn. Claims 157-162, 165, 168 each depend, directly or indirectly, from claim 174, and are believed to be allowable for at least the same reasons. Withdrawal of the rejection of these claims is also respectfully requested.

Rejections under 35 U.S.C. §103(a) in view of Wilding

Claims 169-171 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Wilding.

As discussed above with respect to the rejection under §102(e) in view of Wilding, the premise that Wilding teaches all of the limitations of claim 174 is believed to be incorrect. Accordingly, while Applicants do not concede that the modifications suggested by Patent Office would have been motivated by Wilding, or any other art of record, the present rejection cannot stand, regardless. Thus, withdrawal of the rejection of claims 169-171 is respectfully requested.

CONCLUSION

In view of the foregoing, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this response, that the application is not in condition for allowance, the Examiner is requested to call the undersigned at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge Deposit Account No. 23/2825, under Order No. B1102.70000US00 from which the undersigned is authorized to draw.

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Respectfully submitted,

By 

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